

Docket No.: NHL-KEH-24 US
Serial No.: 10/617,519
Customer No.: 52671

Claim Amendments

1-20. (canceled)

21. (new) A tool for drilling countersunk holes comprising:
a drill having a central longitudinal axis;
said drill comprising a fluted shaft portion comprising at least one flute;
a clamping ring comprising a countersinking arrangement;
said clamping ring being configured to be disposed to surround a part of said fluted shaft portion of said drill and to form at least one opening between said at least one flute and said clamping ring;
said clamping ring comprising at least one threaded hole being disposed through said clamping ring and being configured to be disposed essentially radially with respect to said longitudinal axis of said drill;
at least one clamping shoe being configured to be disposed in said at least one opening and adjacent said at least one threaded hole; and
at least one locking screw being configured to be screwed into and through said at least one threaded hole to contact said at least one clamping shoe to clamp said clamping shoe against said at least

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one flute and to clamp said clamping ring to said drill to permit countersinking of holes drilled by said tool.

22. (new) The tool as claimed in Claim 21, wherein:

said drill comprises a drill tip;

said clamping shoe comprises a chip deflecting end that projects in the direction toward said drill tip with a chip deflecting end and said clamping ring.

23. (new) The tool as claimed in Claim 22, wherein:

said chip deflecting end of said clamping shoe overlaps at least the cross-section of the respective spiral flute;

said clamping shoe comprises a shaft;

said chip deflecting end of said clamping shoe forms the flank of a spacer rib acting relative to said clamping ring; and

said spacer rib projects in the radial direction beyond said shaft of said clamping shoe.

24. (new) The tool as claimed in Claim 23, wherein:

said drill comprises a shaft portion;

said fluted shaft portion is disposed between said drill tip and

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said shaft portion;

said chip deflecting end comprises a chip deflecting surface;

said chip deflecting surface of said chip deflecting end of said clamping shoe forms an acute angle with the bottom of said spiral flute portion, which acute angle opens in the direction from said drill tip toward said shaft portion; and

said chip deflecting surface is essentially flat in its area positioned within said spiral flute.

25. (new) The tool as claimed in Claim 24, wherein the size of the acute angle increases its angular measurement at a bend adjacent said spacer rib on the side of said chip deflecting surface facing said clamping ring, which is positioned outside said spiral flute in the clamped position.

26. (new) The tool as claimed in Claim 25, wherein:

said clamping shoe comprises a bearing surface;

said spiral flutes comprise a wall surface;

said chip deflecting end, at its side facing said clamping ring and projecting beyond said spiral flute and the counter-flank of said spacer rib, forms an acute angle with a portion of said clamping ring

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adjacent said clamping shoe, which acute angle closes in the direction of rotation of said tool;

said bearing surface of said clamping shoe comprises a recess in the form of a ring segment on or in the corresponding spiral flute, between said chip deflecting end and said drill tip, and maintains a radial distance to the wall surface of said spiral flute; and

said clamping shoe comprises one of:

a pressure application surface for said locking screw that is disposed in said bearing surface of said clamping shoe and faces the engagement of said locking screw; and

a conical depression, comprising a diameter which tapers in the direction of pressure, that is provided in the surface of the clamping shoe and faces the engagement of said locking screw.

27. (new) A tool for drilling countersunk holes comprising:

a drill having a central longitudinal axis;

said drill comprising a fluted shaft portion comprising at least one flute;

a clamping ring comprising a countersinking arrangement;

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said clamping ring being configured and disposed to surround a part of said fluted shaft portion of said drill and to form at least one opening between said at least one flute and said clamping ring;

said clamping ring comprising at least one threaded hole being disposed through said clamping ring and being disposed essentially radially with respect to said longitudinal axis of said drill;

at least one clamping shoe being disposed in said at least one opening and being disposed adjacent said at least one threaded hole; and

at least one locking screw being screwed into and through said at least one threaded hole and contacting said at least one clamping shoe to clamp said clamping shoe against said at least one flute and to clamp said clamping ring to said drill to permit countersinking of holes drilled by said tool.

28. (new) The tool as claimed in Claim 27, wherein:

said drill comprises a drill tip;

said clamping shoe comprises a chip deflecting end that projects in the direction toward said drill tip with a chip deflecting end and said clamping ring.

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29. (new) The tool as claimed in Claim 28, wherein:

said chip deflecting end of said clamping shoe overlaps at least the cross-section of the respective spiral flute;

said clamping shoe comprises a shaft;

said chip deflecting end of said clamping shoe forms the flank of a spacer rib acting relative to said clamping ring; and

said spacer rib projects in the radial direction beyond said shaft of said clamping shoe.

30. (new) The tool as claimed in Claim 29, wherein:

said drill comprises a shaft portion;

said fluted shaft portion is disposed between said drill tip and said shaft portion;

said chip deflecting end comprises a chip deflecting surface;

said chip deflecting surface of said chip deflecting end of said clamping shoe forms an acute angle with the bottom of said spiral flute portion, which acute angle opens in the direction from said drill tip toward said shaft portion; and

said chip deflecting surface is essentially flat in its area positioned within said spiral flute.

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31. (new) The tool as claimed in Claim 30, wherein the size of the acute angle increases its angular measurement at a bend adjacent said spacer rib on the side of said chip deflecting surface facing said clamping ring, which is positioned outside said spiral flute in the clamped position.

32. (new) The tool as claimed in Claim 31, wherein:

said clamping shoe comprises a bearing surface;

said spiral flutes comprise a wall surface;

said chip deflecting end, at its side facing said clamping ring and projecting beyond said spiral flute and the counter-flank of said spacer rib, forms an acute angle with a portion of said clamping ring adjacent said clamping shoe, which acute angle closes in the direction of rotation of said tool;

said bearing surface of said clamping shoe comprises a recess in the form of a ring segment on or in the corresponding spiral flute, between said chip deflecting end and said drill tip, and maintains a radial distance to the wall surface of said spiral flute; and

said clamping shoe comprises one of:

a pressure application surface for said locking screw that is disposed in said bearing surface of said clamping shoe and

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faces the engagement of said locking screw; and

a conical depression, comprising a diameter which tapers in the direction of pressure, that is provided in the surface of the clamping shoe and faces the engagement of said locking screw.

33. (new) A twist drill arrangement for drilling countersunk holes comprising:

a twist drill having a central longitudinal axis;

said twist drill comprising a fluted shaft portion comprising at least one flute;

a clamping ring comprising a countersinking arrangement;

said clamping ring being configured and disposed to surround a part of said fluted shaft portion of said twist drill and to form at least one opening between said at least one flute and said clamping ring;

said clamping ring comprising at least one threaded hole being disposed through said clamping ring and being disposed essentially radially with respect to said longitudinal axis of said twist drill;

at least one clamping shoe being disposed in said at least one opening and being disposed adjacent said at least one threaded hole;

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and

at least one locking screw being screwed into and through said at least one threaded hole and contacting said at least one clamping shoe to clamp said clamping shoe against said at least one flute and to clamp said clamping ring to said twist drill to permit countersinking of holes drilled by said twist drill arrangement.

34. (new) The twist drill arrangement as claimed in Claim 33, wherein:

said twist drill comprises a drill tip;

said clamping shoe comprises a chip deflecting end that projects in the direction toward said drill tip with a chip deflecting end and said clamping ring.

35. (new) The twist drill arrangement as claimed in Claim 34, wherein said chip deflecting end of said clamping shoe overlaps at least the cross-section of the respective spiral flute.

36. (new) The twist drill arrangement as claimed in Claim 35, wherein:

said clamping shoe comprises a shaft;

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said chip deflecting end of said clamping shoe forms the flank of a spacer rib acting relative to said clamping ring; and

said spacer rib projects in the radial direction beyond said shaft of said clamping shoe.

37. (new) The twist drill arrangement as claimed in Claim 36, wherein:

said twist drill comprises a shaft portion;

said fluted shaft portion is disposed between said drill tip and said shaft portion;

said chip deflecting end comprises a chip deflecting surface;

said chip deflecting surface of said chip deflecting end of said clamping shoe forms an acute angle with the bottom of said spiral flute portion, which acute angle opens in the direction from said drill tip toward said shaft portion.

38. (new) The twist drill arrangement as claimed in Claim 37, wherein said chip deflecting surface is essentially flat in its area positioned within said spiral flute.

39. (new) The twist drill arrangement as claimed in Claim 38,

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wherein the size of the acute angle increases its angular measurement at a bend adjacent said spacer rib on the side of said chip deflecting surface facing said clamping ring, which is positioned outside said spiral flute in the clamped position.

40. (new) The twist drill arrangement as claimed in Claim 39, wherein:

said clamping shoe comprises a bearing surface;

said spiral flutes comprise a wall surface;

said chip deflecting end, at its side facing said clamping ring and projecting beyond said spiral flute and the counter-flank of said spacer rib, forms an acute angle with a portion of said clamping ring adjacent said clamping shoe, which acute angle closes in the direction of rotation of said tool;

said bearing surface of said clamping shoe comprises a recess in the form of a ring segment on or in the corresponding spiral flute, between said chip deflecting end and said drill tip, and maintains a radial distance to the wall surface of said spiral flute; and

said clamping shoe comprises one of:

a pressure application surface for said locking screw that is disposed in said bearing surface of said clamping shoe and

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faces the engagement of said locking screw; and

a conical depression, comprising a diameter which tapers in the direction of pressure, that is provided in the surface of the clamping shoe and faces the engagement of said locking screw.